PreCam Astrometry Update for the Night of 2011-01-13 UT

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DES-Calib/PreCam Telecon

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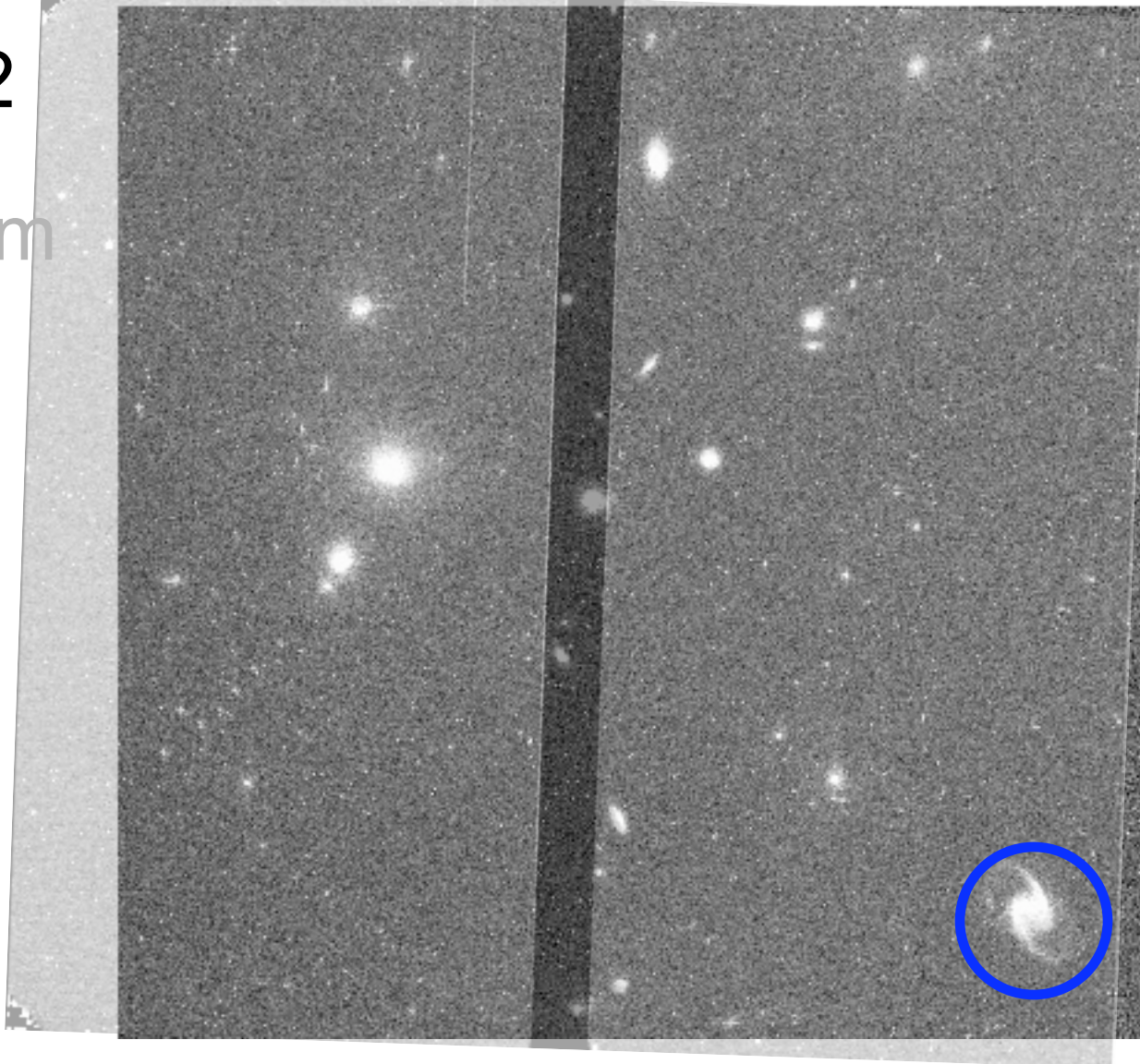
DSS2

PreCam

Pixel scale: 1.43"
RA, DEC Offset
PreCam image
rotated by 2°
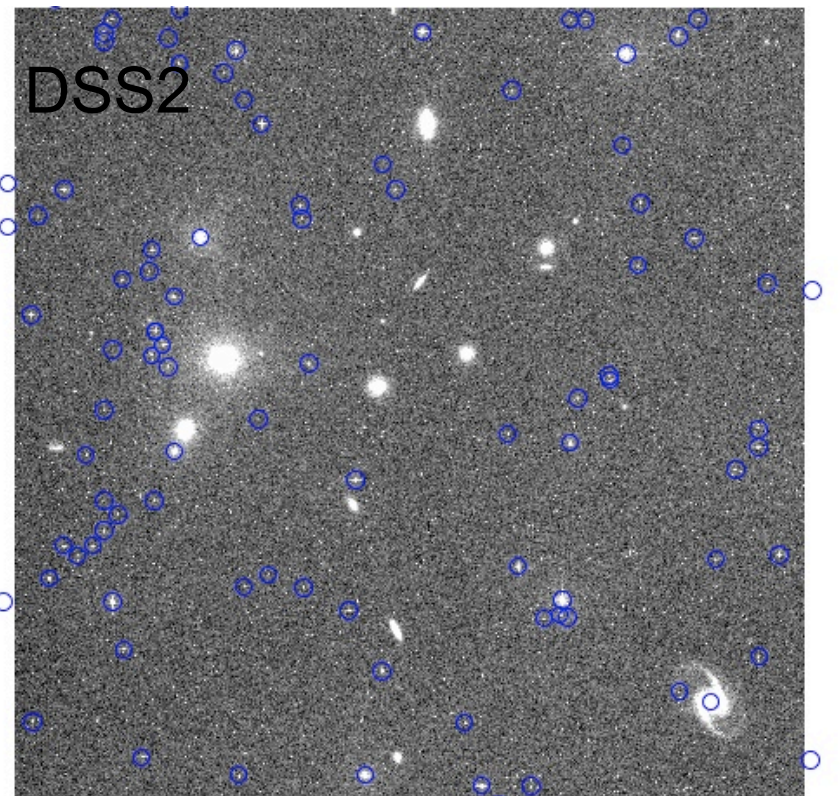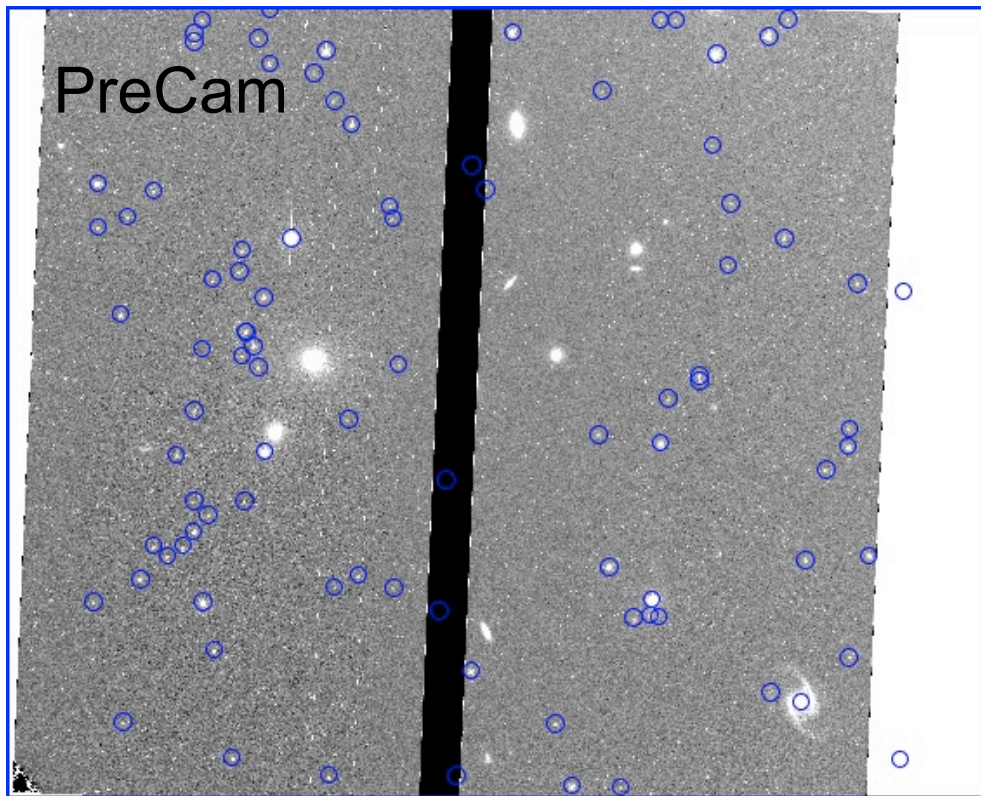clockwise

From February 25: Results and Code

- Used IRAF ccmap routine to re-measure pixel scale and size of the gap between the CCDs

  - Pixel scale: 1.449 arcsec/pixel

  - Size of Gap: 287 arcsec   ($\rightarrow$ 4.78 arcmin)

- Updated astrometry pre-burner to non-interactively measure not only RA,DEC offsets but also the rotation.

  - Loop through a set of rotation angles (say, -5° to +5° in 0.5° steps)

  - For each rotation angle, try to match stars between the PreCam image and the 2MASS catalog for that area of sky using different RA,DEC offsets.

  - Choose the combined rotation angle and RA,DEC offset that yields the most matches between the PreCam image and the 2MASS catalog.

From February 25: Results

- Rotation Angle: 2.5° (clockwise)

- RA Offset: +317 arcsec*cos(DEC)

- DEC Offset: +3 arcsec

- Rotation good to +/-0.25°

- Offsets good to several arcsec

Current Results

- Ran astrometric pre-burner on all target images from 2011-01-13UT

    - /data/des06.a/data/PreCam/Analysis/dtucker/R20110113UT

    - OK as a pre-burner, but need other code for final astrometric calibration

- Code available

    - /data/des06.a/data/PreCam/Software/dtucker/

    - To run on FNAL SDSS/DES cluster:

        - setup astropy

        - /data/des06.a/data/PreCam/Software/dtucker/matchStarsRaDec4_precam.py --image=precamImcorrect_1.62.2_._PreCam_00021912_01_im.fits --format=std   --rotAngleDegList="-3.0,-2.5,-2.0"

    - Also outputs a table that can be fed to IRAF/pyraf CCMAP routine.

Extra Slides

- Previous presentations in this series:
    - February 8:   DES-doc#5285
    - February 25: DES-doc#5325